

FINAL

CENTRAL MARIN FERRY CONNECTION PROJECT



Prepared For
City of Larkspur

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EXECUTIVE SUMMARY

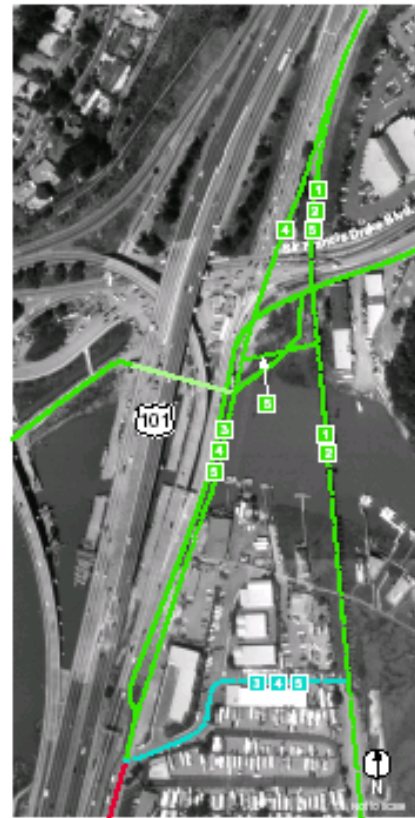
The Central Marin Ferry Connection (CMFC) project was first identified in the Marin County Bicycle and Pedestrian Master Plan (2000) as one of the top 25 most important projects in Marin County for a number of reasons:

1. It is at the crossroads of almost all trips between central and southern Marin County.
2. It serves the Larkspur Ferry Terminal, a major destination and one that is easily accessible by walking or bicycling from many residential areas.
3. The current situation is inadequate to encourage more bicycling and walking within the corridor.
4. It connects numerous school, shopping, recreation, and commuter routes and existing bikeway segments.

This project is located on the east side of U.S. 101 between the East Sir Francis Drake Boulevard (ESFD) corridor on the north and the communities of Larkspur and Corte Madera on the south. This corridor provides access to many important destinations including the Larkspur Landing Shopping Center, Bon Air Shopping Center, Marin Central Plaza, Drakes Landing, Larkspur Ferry Terminal, and the residential communities at Greenbrae Boardwalk, Marin RV Park, Golden Gate Trailer Park, and the apartments at Larkspur Landing. In addition, this project connects to existing trail systems along Corte Madera Creek, the trails along Paradise Drive in Corte Madera, and the trail system in Larkspur and Corte Madera within the abandoned Northwestern Pacific Railroad corridor.

Currently, the U.S. 101 Corte Madera Creek overcrossing does provide bicycle and pedestrian access over the creek, but this connection consists of a narrow sidewalk on the east side that places users very close to high-speed traffic and a narrow separated pathway on west side of the highway that requires bicyclists to dismount. The purpose of the Central Marin Ferry Connection Feasibility Study is to determine a more user-friendly alignment.

In early 2002, the City of Larkspur received a Bay Trail Planning Grant to initiate research into this project. Alta Planning + Design was hired to review the five corridor



The five options for the CMFC project as illustrated in the 2000 Marin County Bicycle and Pedestrian Master Plan.

alignment options mentioned in the Marin County Bicycle and Pedestrian Master Plan, develop and eliminate others as relevant, and to recommend a preferred alignment. This study and accompanying preliminary design documents are the result of that planning grant.

PROJECT ALTERNATIVES

Two major alternatives were developed, each with three sub-options. The primary alignments were defined as either (1) a multi-use path along the NWP right-of-way, or (2) a Class 1 multi-use path along Redwood Highway.

ALTERNATIVE ONE - Locate a multi-use path on the NWP right-of-way starting at Wornum Drive.

Sub-Option 1A - *NWP/Drawbridge*

- The multi-use path follows the NWP right-of-way from Wornum/Redwood Highway northward across a rehabilitated trestle and drawbridge, connecting to the south side of East Sir Francis Drake Boulevard (ESFD) on a new ramp.
- A new drawbridge would be installed at Corte Madera Creek.
- The pathway could continue across ESFD on a new bridge as part of a future connection to Cal Park Tunnel and/or Larkspur Landing.
- The multi-use path would fall entirely within the NWP right-of-way.

Sub-Option 1B - *NWP/Ramped Bridge*

- This option is similar to Sub-Option 1A but rather than using the existing trestle and drawbridge across Corte Madera Creek, the existing trestle and drawbridge would be removed and a new fixed bridge constructed within the NWP right-of-way. The bridge would provide sufficient clearance to meet Coast Guard requirements and utilize the existing concrete abutments.

Sub-Option 1C - *NWP/Off-ramp*

- The multi-use path follows the NWP right-of-way from Wornum/Redwood Highway up to a new east-west easement to be purchased from the property owner. The easement would take the pathway to the frontage road, and connect to the new U.S. 101 bridge and pathway as described below under Alternative 2. This is a hybrid option between Alternatives 1 and 2, taking advantage of the NWP right-of-way while avoiding the problems with the trestle and drawbridge. A new ramp connects the off-ramp path with the existing at-grade SFDB paths.
- On the north side of Corte Madera Creek, the path could cross over ESFD on a new bridge that meets the NWP right-of-way on the north side of the road. Although this crossing is within the scope of the CMFC project, it would most likely be constructed as part of a future connection to the Cal Park Tunnel or Larkspur Landing.

ALTERNATIVE TWO - Locate a Class1 multi-use path along the west side of Redwood Highway from Wornum Drive northward.

Sub-Option 2A - *Redwood Highway/Off-ramp*

- A 10- to 12-foot wide Class 1 multi-use path would be installed along the west side of Redwood Highway from Wornum Drive to the existing pathway location leading onto the Corte Madera Creek U.S. 101 bridge.
- The Class 1 path would lead directly to a new bridge structure on the U.S. 101 ESFD off-ramp bent caps. A new ramp would connect the off-ramp path to the existing at-grade ESFD paths.
- On the north side of Corte Madera Creek, the path could cross over ESFD on a new bridge that meets the NWP right-of-way on the north side of the road. This would likely be constructed as part of a future connection to the Cal Park Tunnel or Larkspur Landing.

Sub-Option 2B - *Redwood Highway/Off-ramp/Trestle*

- This is essentially the same as Sub-Option 2A, except that a new wooden trestle would link to the existing historic trestle rather than constructing a new bridge directly from the new U.S. 101 off-ramp bridge. This elevated structure could be constructed directly over the existing boardwalk in this area. From that point the path could continue over ESFD on a new bridge to be constructed if and when the Cal Park Tunnel project moves forward or a connection to Larkspur Landing is sought.

Sub-Option 2C - *Redwood Highway/Off-ramp/No SFDB Crossing*

- This is essentially the same option as 2A and 2B except that rather than a new bridge over ESFD, users are simply directed along the south side of ESFD to the existing signals and crosswalks at Larkspur Landing Circle.

The ability to construct a project in phases can be an important element because it may allow for agency location of funds over time, rather than all at once. The three phases of all options include the southern section along the NWP right-of-way between Corte Madera Creek and Wornum Drive (Phase 1), crossing Corte Madera Creek to East Sir Francis Drake Boulevard (Phase 2), and crossing East Sir Francis Drake Boulevard to connect to Larkspur Landing and the future Cal Park Tunnel bikeway (Phase 3).

EVALUATION

A decision matrix with clearly described criteria and scoring was used to evaluate each project alternative. The evaluation criteria were based on the overall project goals and were weighted to reflect the relative importance of each category. This criterion was then used to evaluate each of the alternative alignments. The criteria used for the CMFC alternatives was as follows:

- Vehicle Conflicts / User Safety
- Functionality / Access
- Usage
- Cost
- Compatibility with Plans
- Potential Implementation Problems
- Ease of Implementation
- Public Support
- Privacy / Security
- North-South Bikeway
- Right-of-Way
- Environmental / Wetland Impacts
- Cultural Resources
- Noise / Health
- Aesthetics / Visual Impacts

Alternative 1B scored the highest due to the complete separation from motor vehicle traffic, functionality, directness, maximum usage potential, aesthetics, and public support. Alternative 1A also scored well because of the same characteristics as 1B, but implementation complications prevented it from outscoring 1B. Alternatives 2A, 2B, and 2C scored lowest due to the combination of a less-than-desirable environment to walk or bicycle (due to the proximity to U.S. 101), and/or the cost.

The Technical Advisory Committee reviewed and discussed the results of this screening process with the result that three preferred alignments (1A, 1B, and 1C) were identified for more in-depth analysis. Alternative 1A was determined to have several significant problems. This includes inherent problems with operating a drawbridge and the condition of the drawbridge itself. Due to these and other problems, Alternative 1A was dropped from consideration.

Alternatives 1B and 1C more closely meet the goals and objectives of the Technical Advisory Committee (TAC). Alternative 1B scores the highest based on the criteria discussed previously and is a preferred option of the TAC, but there are six major obstacles that need to be overcome:

1. Finding an agency willing to take on the construction, operation, and maintenance of a new high-level bridge
2. Compatibility with future SMART plans
3. Controversy surrounding loss of trestle and drawbridge
4. Environmental impacts to the wetlands during construction
5. Visual impacts from a high level bridge
6. Easement acquisition through the Marin RV Park

Alternative 1C contains many of the advantages of Alternatives 1A and 1B, but is not as direct as either of those options. Safety issues would be minimal since a single traffic conflict would occur at the un-signalized crossing of Redwood Highway on its northern section where low traffic volumes exist. The Class 1 path in the NWP right-of-way and the new bent cap structure could be completed with minimal environmental impact. However, potential fatal flaws for this

alignment include potential conflicts with future Corte Madera Creek U.S. 101 widening, the need for Caltrans approvals, and the need to acquire the easement through the mobile home park.

TAC RECOMMENDATION

After reviewing the materials developed in this feasibility study, the Technical Advisory Committee unanimously recommended the following at their February 4, 2004, meeting:

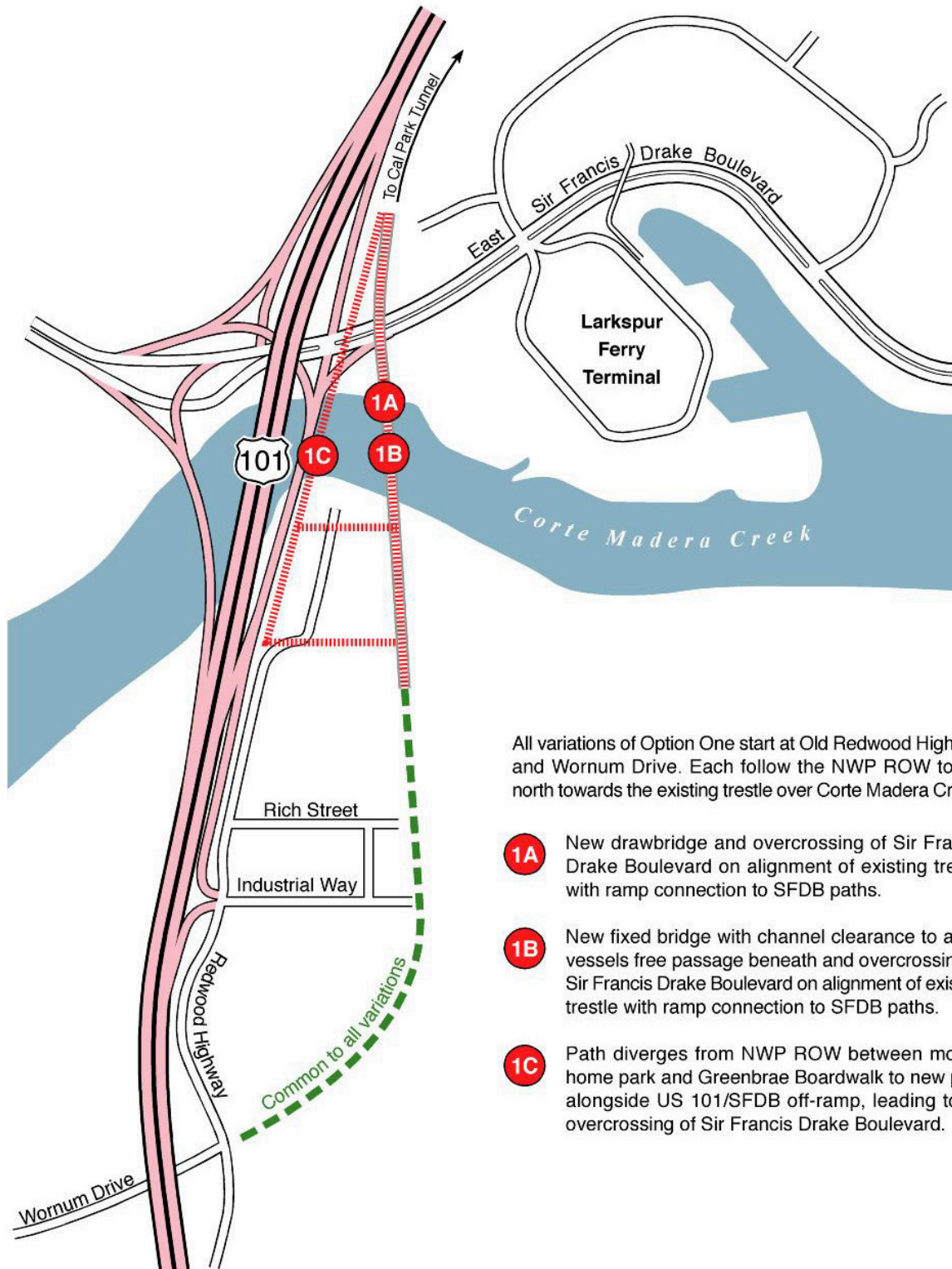
- The preferred alignment for the Central Marin Ferry Connection project is Alternative 1B, which essentially follows the old Northwestern Pacific Railroad right-of-way between Wornum Drive in Corte Madera, across Corte Madera Creek, and on to East Sir Frances Drake Boulevard on a new high-level bridge to Larkspur Landing. The TAC concluded that this option provides the most functional, direct, and enjoyable route for pedestrians and bicyclists. Potential problems with the high-level bridge include maintenance costs and environmental impacts, which have not been analyzed yet, although BCDC has given it preliminary approval.
- Should a high level bridge not be feasible for maintenance or environmental impact reasons, Alternative 1C would be the preferred alignment. This route follows the Northwestern Pacific Railroad right-of-way from the south, crosses over the U.S. 101 northbound Sir Frances Drake off-ramp via a new easement on the north edge of a mobile home park, and crosses Corte Madera Creek on the bent caps of the highway structure.
- The TAC also recommends that the lead agency status of the MOU partners be changed from the City of Larkspur to the Marin County Congestion Management Agency, subject to discussions between those agencies.

Based on the analysis in this report and input from the four participating agencies and the TAC, the following recommendations are made:

1. **Proceed with Phase I.** Continue planning, design, and implementation of the Phase I segment of the project, which is a new Class I pathway on the NWP right-of-way from Wornum/Redwood Highway to the Marin RV Park, and from that point to a new easement on the perimeter of the RV Park to Redwood Highway. This effort includes obtaining a new easement on the perimeter of the Marin RV Park, and possibly modifying or removing some existing tenants on the NWP right-of-way at the end of Industrial Way to allow for a pathway. This would provide a new Bay Trail segment, and enhance access to the existing sidewalk on the U.S. 101 Corte Madera Creek overcrossing.
2. **Seek Policy Guidance.** The decision to proceed with Alternative 1B is a policy decision among the four member agencies participating on this project. Staff from each of the agencies should provide their recommendations in a Staff Report, supported by the TAC recommendations. Each of the alternatives has significantly different costs, advantages,

and disadvantages. Policy guidance is required as to the feasibility and desirability to take on new maintenance responsibilities for a major new structure over Corte Madera Creek.

3. **Identify an Implementation Agency.** The funding application and MOU for the project states that Marin County will take the lead in implementing this project. The MOU states: "The City of Larkspur will request that the Marin County Congestion Management Agency consider assuming responsibility for subsequent projects to complete the work initiated by this grant, as the Congestion Management Agency generally coordinates multi-jurisdictional projects." The partners on this project need to resolve the issue of who will lead the implementation phase.
4. **Proceed with Planning and Design.** Continue working with Caltrans and other agencies in the development of plans and designs for Alternative 1B. Work with the four partner agencies to ensure good connectivity southward into Corte Madera, and northward linking to the Cal Park Tunnel project.



All variations of Option One start at Old Redwood Highway and Wornum Drive. Each follow the NWP ROW to the north towards the existing trestle over Corte Madera Creek.

- 1A** New drawbridge and overcrossing of Sir Francis Drake Boulevard on alignment of existing trestle with ramp connection to SFDB paths.
- 1B** New fixed bridge with channel clearance to allow vessels free passage beneath and overcrossing of Sir Francis Drake Boulevard on alignment of existing trestle with ramp connection to SFDB paths.
- 1C** Path diverges from NWP ROW between mobile home park and Greenbrae Boardwalk to new path alongside US 101/SFDB off-ramp, leading to an overcrossing of Sir Francis Drake Boulevard.

Larkspur Trestle Bike Path Option I

10/02